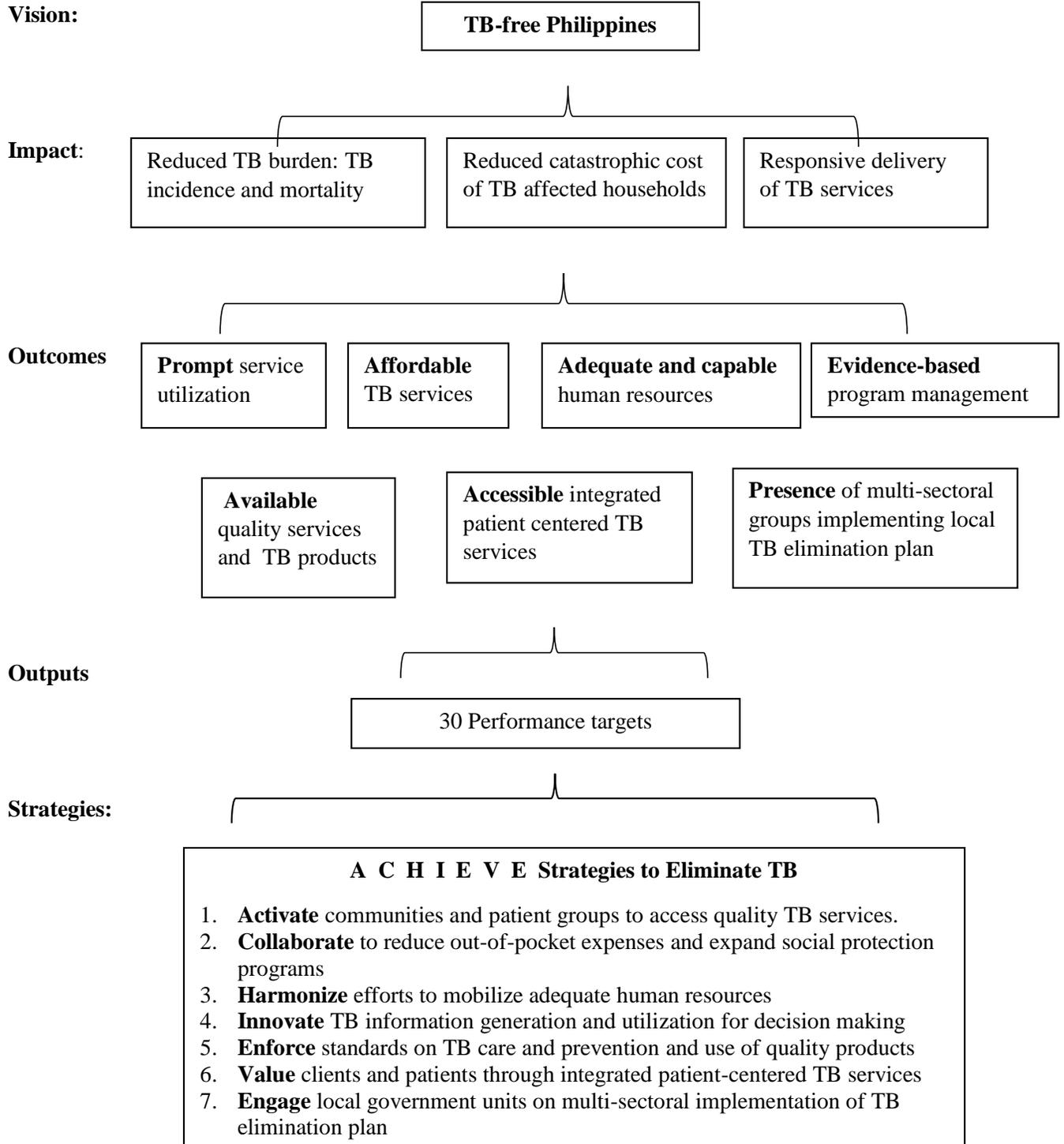


Framework of the PhilSTEP and Targets

The logical framework below shows how the country will accomplish the vision and milestones related to TB elimination.

Fig. 14. Logical framework of PhilSTEP



Goal, objectives and targets:

Long term goal (2035):

Reduce TB burden by decreasing TB mortality rate by 95% and TB incidence by 90%.

Medium term goals (2022):

Reduce TB burden by:

Decreasing the number of TB deaths by 50% from 14,000 to 7,000

Decreasing TB incidence rate by 25% from 322 / 100,000 to 243/ 100,000

Reduce catastrophic costs incurred by TB-affected households from ____ to zero. (baseline data will be available by Q2 2017 from the on-going catastrophic study)

At least 90% of patients are satisfied with the services of the DOTS facilities

Specific objectives by 2022:

1. Improve the utilization of TB care and prevention services by patients and communities.
2. Reduce catastrophic cost of TB-affected households accessing DOTS facilities to zero.
3. Ensure adequate and competent human resources for TB elimination efforts.
4. Improve the use of TB data for effective TB elimination efforts.
5. Guarantee that all TB diagnostic and DOTS facilities are complying with NTP standards and with adequate quality NTP products.
6. Increase to at least 90% of DOTS facilities that are providing integrated patient centered TB care and prevention services.
7. Enhance the capacities of all LGUs to implement localized TB elimination plan in coordination with different sectors.

TB Burden in The Philippines

The findings and discussion under this section were mainly based on the report on the epidemiological review done by Dr. Norio Yamada of RIT-JATA, Japan who was supported by Dr. Florante Magboo of IMPACT last February, 2016 ¹⁹ and the draft Annual TB report as of December 2016 that was prepared by NTP with technical support from WHO country office. ²⁰ Sources of data came from the (a) vital registration system as published in the Philippine Health Statistics (PHS), (b) TB prevalence surveys, and (c) quarterly reports from the DOTS facilities that were consolidated by NTP, either prepared manually or encoded through the Integrated TB Information System (IT IS) .

TB mortality, prevalence and incidence

Since 1926 when DOH or its predecessor started reporting the causes of death and morbidity in the country, TB had always been in the top ten leading causes of deaths. The 2013 PHS ²⁰ show that TB as a cause of deaths is ranked 8th with 23,867 deaths with a rate of 23.7 per 100,000. TB deaths are 4.4% of the total deaths. It is 7th among the top leading causes of morbidity with 101,124 persons reported to

have TB (respiratory and other forms) for a morbidity rate of 103.1 per 100,000. With around 60% of deaths who are not medically attended, with 26.9% of deaths that were ill-defined and causes unknown and number of reported TB cases lower than those notified to NTP, these indicate a weak health surveillance system. Thus, the number of deaths and illnesses due to TB as reported under PHS is of questionable accuracy.

Fortunately, the Philippines is one of the few countries that conducted a series of national TB prevalence – four since 1983 to 2016 – that determined the TB burden. The surveys show a decreasing trend for the prevalence of smear (+) TB cases and culture (+) cases. However, those with x-ray findings reveal an increasing trend. The findings are in the table below;

Table 2. Results of the national TB prevalence surveys in the Philippines ^{21,22, 23}

*on-going

Due to the high cost of doing a national prevalence survey, sub-national prevalence survey is rarely done. The on-going 2016 prevalence survey will have indicative data on TB burden for the four strata – (a) NCR, regions 3 and 4A, (b) rest of Luzon, (c) Visayas and (d) Mindanao.

Among the vulnerable groups, only the TB prevalence among the urban poor and inmates had been measured. The prevalence survey done in 1997 in the National Capital Region among the urban poor shows that TB is 2 – 3x more common among this group. A study of selected Philippine jails and prisons found that prevalence of new smear-positive TB was 12.5 per 1,000 population (Borja et al., 2012) ²⁴. This is more than three times the TB prevalence in communities at 4 per 1,000 population among the adults by the National TB Prevalence Survey done in 2007.

The prevalence of MDRTB cases was determined through the drug resistance survey done in 2004 ²⁵ and 2012. ²⁶ The findings are as follows:

Table 3: Results of the two TB drug resistance surveys, 2004 and 2012

<i>Indicators</i>	<i>1983</i>	<i>1997</i>	<i>2007</i>	<i>2016*</i>
Prevalence rate of smear (+) TB cases / 1000	6.6	3.1	2.0	
Prevalence rate of Xpert (+) / 1000				
Prevalence rate of culture (+) / 1000	8.6	8.1	6.7	
Radiographic findings suggestive of TB /1000	4.2	4.2	6.3	
Annual risk of infection (%)	2.5	2.3	2.1	
TB symptomatics (%)	17.0	18.4	13.5	
Indicator	2004		2012	

Prevalence of MDRTB among new cases	3.8%	2%
Prevalence of MDRTB among re-treatment cases	20.9%	21%
Combined	5.7%	

Based on the national prevalence surveys, WHO estimated the country's TB burden as measured by the TB prevalence, incidence and mortality. For the last 15 years, the TB burden has been declining as shown by Figure 1 and 2 for TB incidence and TB mortality.²⁷

Fig. 1. Trend of TB incidence, 2000 - 2015

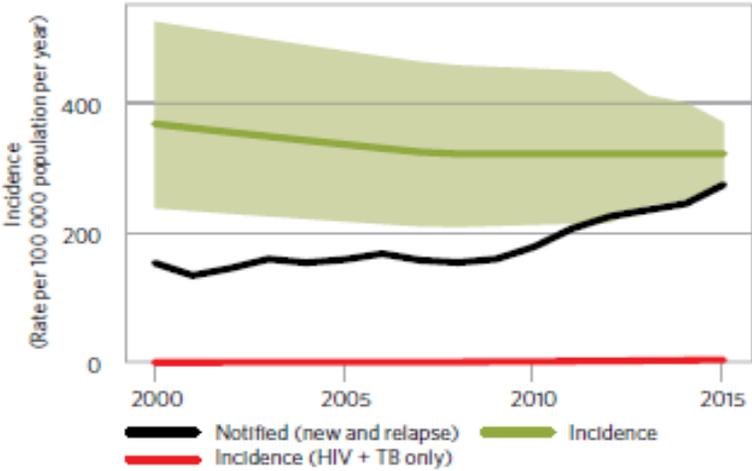
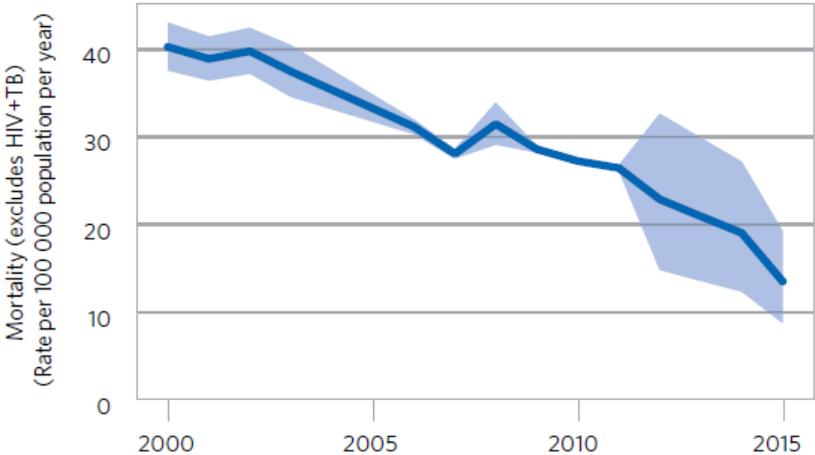


Fig.2 Trend of TB of TB incidence, 2000 - 2010



Prevalence of TB has decreased from 775 cases per 100,000 in the 2000 to 417 cases per 100 000 in 2014. The decrease in TB prevalence estimates has accelerated in recent years, with a mean annual decrease of 4.5% in the past ten years, compared to mean annual decrease of 3.9% between 2000 and 2004. The WHO ceased to provide indirect estimate of TB prevalence after 2014 as it is no longer a high-level indicator

The estimated incidence was 322 per 100,000 or 320,000 new cases in total in 2015. The incidence has decreased at a stable 1.7% annually from 2000-2006. The estimated proportion of new cases with comorbid HIV infection has more than doubled since 2010, reaching 4.3 cases per 100,000 in 2015, 320,000 new cases in total

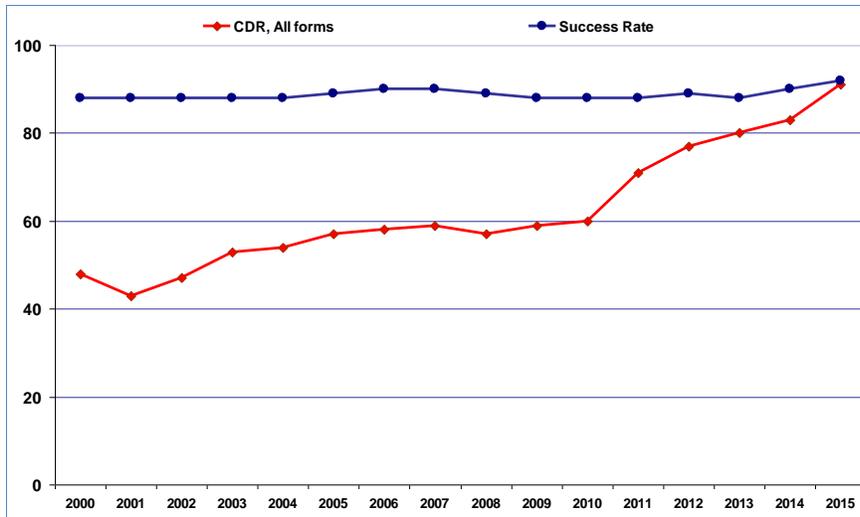
The estimated mortality rate has decreased from 27.4 per 100,000 people in 2010 to 13.5 in 2015, a 50 % reduction. However, the proportion of TB deaths with HIV co-infection has steadily increased to 0.44 cases per 100,000 in 2015. The case fatality rate has decreased from 10.9% in 2000 to 8.5% in 2010 to 4.2% in 2015.

The Philippines is one of the 9 countries that met the MDG target in 2015 of reversing the TB incidence and the STOP TB partnership targets of reducing by 50% the TB prevalence of mortality from 1990 baseline.

TB Case Notification

The case detection rate or currently known as TB treatment coverage has steadily increased since 2000 with 92% in 2015 (Figure 3) . The case notification rate for new cases (all forms) has shown parallel increase, reaching 276.8 cases per 100,000 persons in 2015. The increase is due to increased efforts in case finding through better access to TB microscopy laboratory as shown by the increasing presumptive TB examined, engagement of the private health care providers and hospitals and better community referral system. In 2016, 65 % of total notified TB cases came from the RHUs/HCs, 14% from the private health care providers, 14 % from other public health facilities like hospitals and 7 % were referred by the communities.

Figure 3: Trend of TB case detection rate and treatment success rate, 2000 – 2015

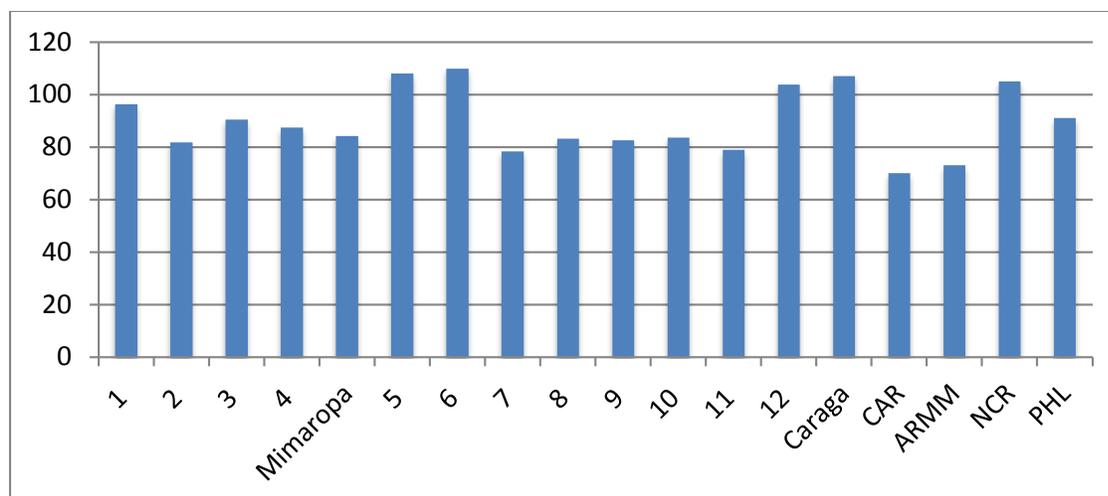


However, since 2011, the number of smear negative (SN) TB has exceeded the number of smear positive (SP) TB and this gap has continued to increase in recent years. This gap resulted from (a) NTP’s target to detect all forms of TB since 2011, in accordance with the WHO recommendation, (b) over-diagnosis due to over-reliance on X-rays result, and (c) low sensitivity of the smear microscopy as a diagnostic tool. Low specificity of X-ray and histology could lead to increased false positive cases and patients unnecessarily starting TB treatment.

Although the number of extra-pulmonary TB (EPTB) cases more than doubled since 2010, it is lower than the global case notification rate for extra-pulmonary TB. This could be due to the limited capability of primary care facilities to diagnose these cases or because such cases were diagnosed in health facilities outside of the NTP network. The program has seen an increase in reported EPTB cases from 2008 as more private and non-NTP public providers were recruited into the NTP network. Since 2013, the categorization of case notification changed. Smear positive (S+) and Xpert positive (Xp+) TB patients fall under the category of bacteriological confirmed (BC) patients. Smear negative (S-) and Xpert negative (Xp-) TB patients who get clinicians’s decision- to-treat now fall under the category of clinically diagnosed(CD) patients.

The three most populous regions (NCR, IV-A and III) reported the highest number of cases – contributing 39% of all TB cases: 35% of BC TB, 42% of CD TB and 35% of EPTB. The composition of each TB type in each region across the country was approximately 54-70% CD TB, 25-43% BC TB and 1-4% EPTB. Accounting for population size, Region VI had the highest case notification rates across all regions for all forms of TB and for each type. On the other hand, ARMM had the lowest case notification rates and they were approximately half of the national values. Seven of the 17 regions had case notification rates at or above the national value for all forms of TB combined.

Fig. 4. Case detection rate by region, 2015



In 2015, the case notification rate for new and relapse cases increased with age except for a dip in the age-group of 5-14 years. The case notification rate in individuals over 65 years old (789 cases per 100,000 persons) was more than 3-folds higher than that for individuals between 15 and 24 years (210 cases per 100,000 persons). Hence, case finding and prevention measures may be more cost-effective in the elderly age-groups because of higher prevalence rates of TB among them. However, the number of TB cases would be higher among the younger and middle-aged adults because they constitute a greater proportion of the general population.

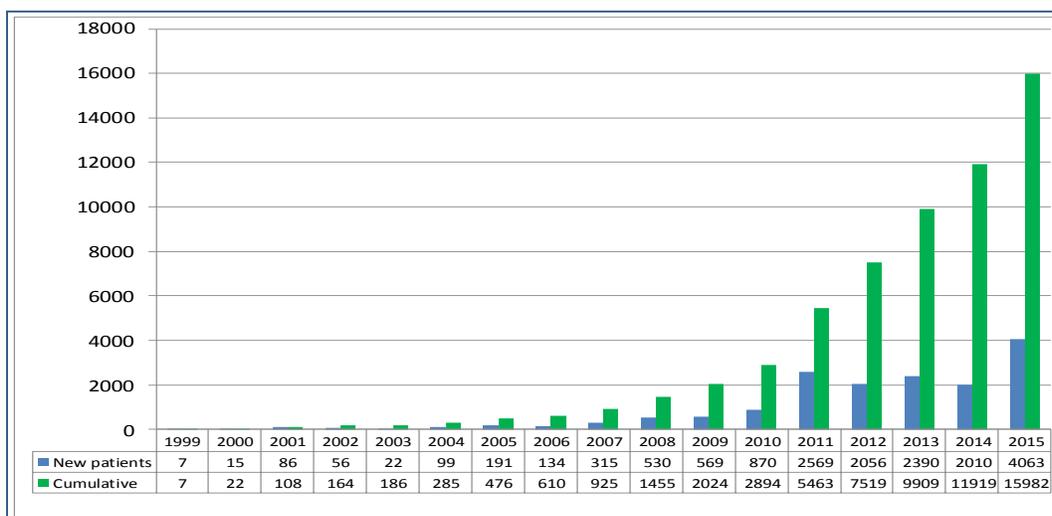
Case notification rate for new cases doubled between 2014 and 2015 for both males and females. The increase in case notification could be attributed to sex disaggregation in case reporting for NSP only (i.e. no EPTB or SN cases) prior to 2015.

The male-to-female ratio remained at 1.9, which is consistent with the prevalence survey carried out in 2007. There were minimal variations in the sex ratio across regions (range 1.7-2.2) except for ARMM, where it was relatively lower among males.

Case notification of DRTB

The number of enrolled drug-resistant tuberculosis (DR-TB) cases continuously increased from 15 cases in year 2000 to 4,063 cases in year 2015 for a cumulative number of 15,982 as shown in figure 5. This is primarily due to improved access to PMDT services through expansion of diagnostic and treatment facilities. By the end of 2016, there are 190 Xpert sites, 26 TB culture laboratories, 3 drug susceptibility testing (DST) centers, 1 line probe assay (LPA) center and 151 satellite/treatment centers across the 17 regions of the country. In addition to the geographic expansion of Xpert/MTB/RIF, the DOH issued policies on the use of Xpert MTB/RIF as the primary diagnostic tool for presumptive DR-TB and presumptive drug-susceptible TB (DS-TB) among selected vulnerable populations (inmates, children and elderly).

Fig. 5. Trend of DRTB notification, 2000 – 2015



TB/HIV coinfection

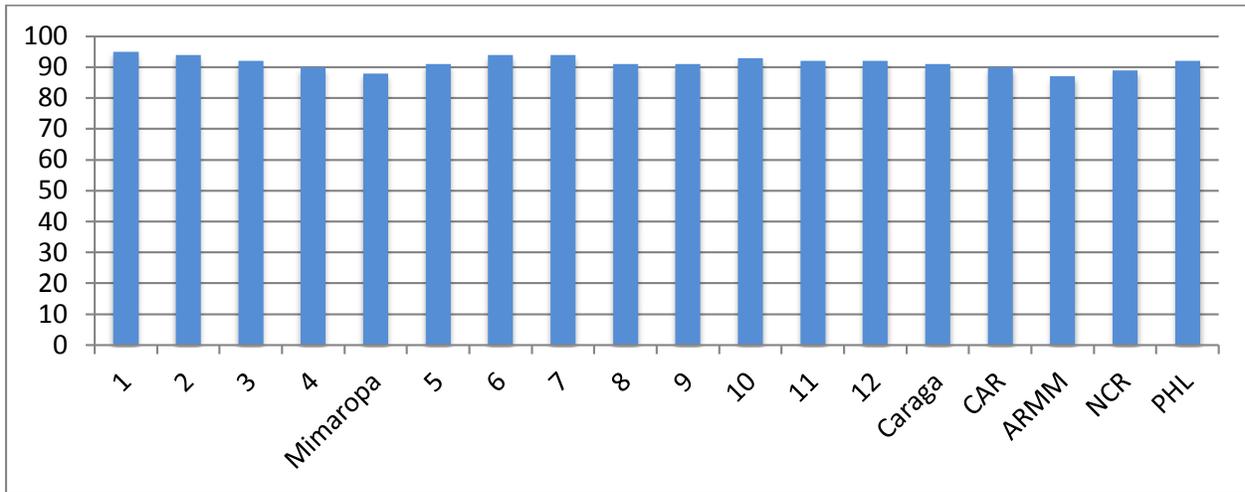
Although the prevalence of HIV is still classified as low, the prevalence has been increasing in the last five years. TB/HIV co-infection based on the screening for TB among PLHIV and screening of PLHIV for TB is below 1%.²⁷

Treatment Outcomes

The rates of treatment success, defined as reported cured or completion of TB treatment after 1 year, has been consistently high for DSTB over the years. Among new smear positive (NSP) cases, the treatment success rates (TSRs) have been above 86 % since 2000 and reached 92% in 2015 (Figure 3). High TSR in DSTB could be attributed to countrywide implementation of TB treatment programs, decentralization of treatment services, participation of community volunteers called “barangay health workers” in “tutok gamutan” and various NTP strategies to improve case holding.. This decentralized approach enabled patients to access treatment and be followed-up over time within their local communities.

Regional differences in treatment outcomes for the 2014 NSP TB cohort are described in Figure 6. Almost all the regions have TSR of more than 90% except for Region 4B, ARMM and NCR.

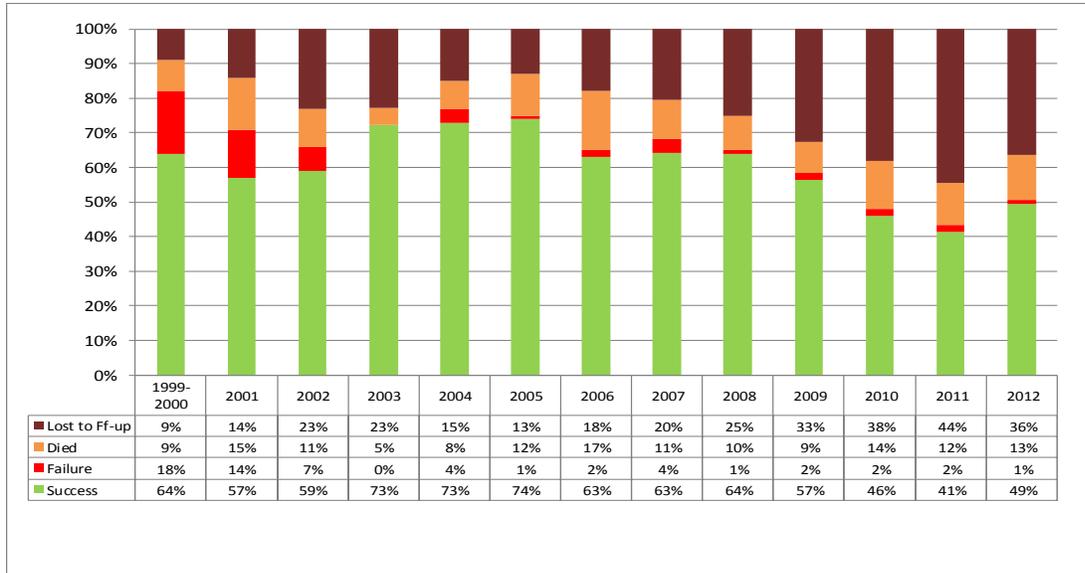
Fig. 6. Treatment success rate by region, 2014 cohort



Treatment outcome of DRTB

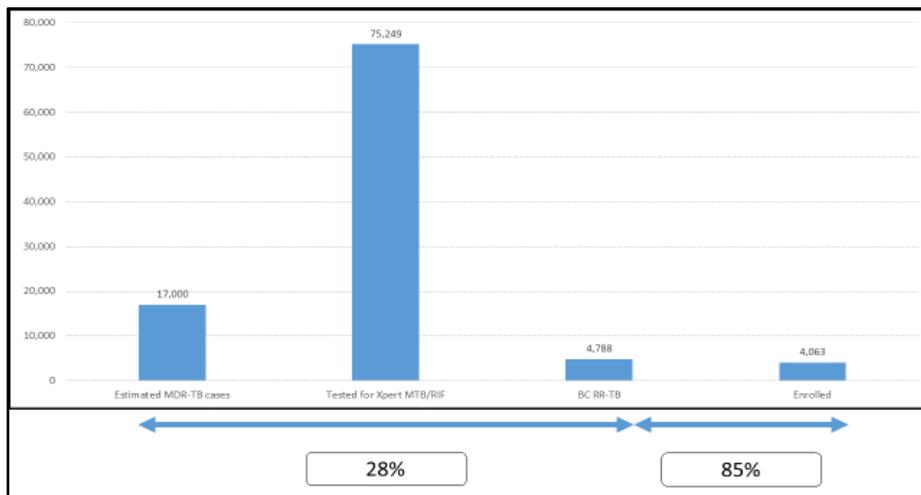
The low treatment success rate (TSR) of DR-TB remains a major concern with high lost to follow-up (LTFU) rate and death rate. In 2011 cohort, TSR is 41% with LTFU rate of 44% which slightly improved to 49% TSR with 36% LTFU rate in 2012, as shown in figure 7. The major reasons for LTFU are adverse events, patient's behavior towards treatment and financial constraints, among others. Based on the LTFU study conducted in 2014, it was found out that one of the independent factors protective against LTFU is receiving any type of support from the TB program. The most often identified by patients as the most effective types of support the Program could provide to help them adhere to treatment are support for transportation costs for travel to the treatment facilities and food assistance

Fig. 7. Trend of treatment outcomes of DRTB, 200 -2015



Although the number of cases detected and enrolled has increased through the years, the notification rate (detected vs estimated RR/MDR-TB cases) remains low. In 2015, the notification rate of RR/MDR-TB is only 28%. This is still due to limited access to Xpert sites despite improvement in the access. To note, there is a gap between RR/MDR-TB detected vs enrolled with approximately 15% initial lost to follow-up in 2015. Refer to figure 8.

Fig. 8. Cascade of PMDT care, 2015



The National TB Control Program²⁸

The National TB Control Program, organized in 1978 and operating within a devolved health care delivery system, is one of the public health programs being managed and coordinated by the Infectious Diseases for Prevention and Control Division (IDPCD) of the Disease Prevention and Control Bureau (DPCB) of the Department of Health (DOH). Headed by a Program Manager and supported by 20 technical and administrative staff it has the following mandate; (1) develop policies, standards and the national strategic plan, (2) manage program logistics, (3) provide leadership and technical assistance to the lower health offices / units, (4) manage data, and (5) conduct monitoring and evaluation. The program's TB diagnostic and treatment protocols and strategies, issued through the Manual of Procedures, are in accordance the policies of World Health Organization (WHO) and the International Standards for TB Care (ISTC). Its last strategic plan was the 2010 – 16 Philippine Plan of Action to Control TB or PhilPACT.

The NTP closely works with various offices of the DOH such as the National Center for Health Promotion (NCHP) for advocacy, communication and social mobilization, the Epidemiology Bureau (EB) and the Knowledge and Management Information and Technology Services (KMITS) for data management, Health Policy Development and Planning Bureau (HPDPB) for policy and strategic plan formulation, Material Management Division (MMD), Central Office Bids and Awards Committee (COBAC) and Food and Drug Administration (FDA) for drug and supplies management, the National TB Reference Laboratory of the Research Institute for Tropical Medicine (NTRL-RITM) for laboratory network management, Lung Center of the Philippines (LCP) for PMDT related research and training activities and the 17 ROs for technical support to the PHOs and implementing units. It also coordinates with the Philippine Health Insurance Corporation (PhilHealth) for the TB-DOTS accreditation and utilization of the TB-DOTS outpatient benefit package.

The 17 Regional Offices (ROs) through its Regional NTP teams manages TB at the regional level while the provincial health office (PHOs) and city health offices (CHOs), through its provincial /city teams are responsible for the TB control efforts in the provinces and cities. TB diagnostic and treatment services is part of the basic integrated health services that are provided by DOTS (currently means delivery of treatment services) facilities which could either be the public health facilities such as the RHUs, health centers, hospitals; other public health facilities such as school clinics, military hospitals, prison/jail clinics; NTP-engaged private facilities such as the private clinics, private hospitals, private laboratories, drug stores and others. Community groups such as the community health teams and barangay health workers participate in community-level activities.

NTP closely works with the 17 government offices and 5 private organizations in compliance with the Comprehensive and Unified Policy (CUP) issued by the Office of the President in 2003. Under the framework of public-private mix (PPM) collaboration in TB-DOTS, NTP collaborates with non-governmental organizations such as the Philippine Coalition Against TB (PhilCAT), a consortium of 60 groups, and the 100-year old Philippine TB Society, Inc. (PTSI) and many others. Various developmental partners and their projects provide technical and financial support to NTP such as the World Health Organization (WHO), United States Agency for International Development (USAID), Global Fund Against AIDS, TB and Malaria (Global Fund), Research Institute of TB/Japan Anti-TB Association (RIT/JATA), Korean Foundation for International Health (KOFIH) and Korean International Cooperation Agency (KOICA) and KNCV.

Figure below illustrates the organizational structure of the country's health delivery system including the different units supporting the NTP.

Figure 9. Organizational Structure of Health Care Delivery System. Philippines.

